DATA EVALUATION RECORD

1. __Chemical__: α-butyl-α-(4-chlorophenyl)-1 H-1,2,4-triazole-1-propane nitrile

   Shaughnessy Number 128857

2. __Test Material__: RH-53,866 technical, Lot LSPL 83/0017E, 84.5% a.i.

3. __Study Identification__: Forbis, A.D.. et al. 1984. Acute Toxicity of RH-53,866 to Daphnia magna. Report #30727. Analytical Bio-chemistry Laboratories Inc. Columbia, MO. EPA EUP Nos. 707-EUP-RNL and 707-EUP-RNU, Acc. No. 072894

4. __Study Type__: Acute toxicity for freshwater Aquatic Invertebrates

5. __Reviewed by__: Robert W. Pilsucki _Robert Wichul_ 1/2/85
   Microbiologist
   Ecological Effects Branch/HED

6. __Approved by__: for Raymond Matheny _Denni M. Hao_
   Head, Review Section 1

7. __Reported Conclusions__: The acute 48-hour LC_{50} for Daphnia magna was 11 (95% C.L. = 9.5 - 13) mg/L.
   NOEL = 3.2 mg/L

8. __Reviewer s conclusions__: This study is scientifically sound and with a LC_{50} of 11 mg RH 3866 is slightly toxic to Daphnia magna. This study does fulfill the requirement for an LC_{50} to freshwater aquatic invertebrates.

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9. <u>Materials/Methods</u>

<u>Species</u>: <u>Daphnia</u> <u>magna</u>

<u>Age</u>: 1st instar

<u>Source</u>: Analytical Biochemistry Inc. Laboratory Stock

<u>Test Vessel</u>: Size/Volume: 250 ml containing 200 ml. of test water.

<u>Construction</u>: Glass

<u>Test Water</u>:

Temperature: 20 $\pm$ 2.0 C
Source and water chemistry. Well water was used as test water
and had the following characteristics: hardness as $CaCO_3$,
225-275 mg/l; alkalinity as $CaCo_3$, 325-375 mg/L; conductivity,
700 umhos/cm; D.O., 9.2-10.2 ppm; pH, 7.8-8.3.

The water was also analyzed for organophosphorus and organochlorine
pesticides (see attached tables).

Aeration: None

D.O.: During the test, the dissolved oxygen measurements
were (mg/L)

Time (hr)	Control	Low Conc.	Middle Conc.	High Conc.
0	7.3	*	*	*
48	7.3	7.2	7.2	7.1

* = not measured

pH: During the test, the pH measurements were:

Time (hr)	Control	Low Conc.	Middle Conc.	High Conc.
0	8.0	*	*	*
48	8.2	8.5	8.5	8.5

* = not measured

<u>Solvent</u>: Acetone. The maximum amount of solvent did not exceed 0.5 ml/L.

<u>Control/Solvent control</u>: Both negative and solvent controls were run
concurrent with the test material. There was no
mortality in either control.

<u>Number of invertebrates/concentration</u>: 20

Concentrations - Mortalities

Acute LC50 <u>Daphnia magna</u>

Conc.[a] mg/L	Number Exposed	Number Dead	Percent Mortality
18	20	18	90
10	20	9	45
5.6	20	0	0
3.2	20	0	0
1.8	20	0	0

[a] Dose adjusted to yield 100% a.i.

Toxic symptoms: At 5.6, 10 and 18 mg/L, 35%, 55% and 100% of the <u>Daphnia</u> respectively settled to the bottom.

10. <u>Statistical Analysis</u>: The LC_{50} and 95% confidence limits were calculated using the computer program of Stephan et al. The LC_{50} and confidence limits reported were those obtained using the binominal test.

11. <u>Discussion</u>: There is no <u>Discussion</u> section in this report

12. <u>Reviewer s Evaluation</u>:

Test procedure: This study generally follows EPAs guidelines for an acute toxicity test for freshwater aquatic invertebrates.

<u>Statistical Analysis</u>: EEB verification of the results gave the following LC_{50}s and 95% confidence limits:

Method	LC50	95% C.L.
binomial test	10.5989	5.6 and 18
moving acreage	10.9459	9.5147 and 12.777
probit method	11.05	9.4466 and 12.977

<u>Discussion</u>: The results of this study generally coincide with those obtained by EEB and show that RH-3866 is slightly toxic to <u>Daphnia magna</u> under these conditions.

13. <u>Conclusions</u>:

1. <u>Category</u>: Core
2. <u>Rationale</u>: This study generally follows EPA s guidelines for an acute toxicity test for freshwater aquatic invertebrates.
3. <u>Repairability</u>: N/A

PILSUCKI   RH-3866   ACUTE TOXICITY FOR DAPHNIA MAGNA
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CONC.	NUMBER EXPOSED	NUMBER DEAD	PERCENT DEAD	BINOMIAL PROB.(PERCENT)
18	20	18	90	.0201225
10	20	9	45	41.1901
5.6	20	0	0	9.53674E-05
3.2	20	0	0	9.53674E-05
1.8	20	0	0	9.53674E-05

THE BINOMIAL TEST SHOWS THAT 5.6 AND 18 CAN BE
USED AS STATISTICALLY SOUND CONSERVATIVE 95 PERCENT
CONFIDENCE LIMITS, BECAUSE THE ACTUAL CONFIDENCE LEVEL
ASSOCIATED WITH THESE LIMITS IS GREATER THAN 95 PERCENT.

AN APPROXIMATE LC50 FOR THIS SET OF DATA IS 10.5989

RESULTS CALCULATED USING THE MOVING AVERAGE METHOD

SPAN	G	LC50	95 PERCENT CONFIDENCE LIMITS	
2	.0760279	10.9459	9.51465	12.777

RESULTS CALCULATED USING THE PROBIT METHOD

ITERATIONS	G	H	GOODNESS OF FIT PROBABILITY
8	.160638	1	.795421

SLOPE   =   6.83239
95 PERCENT CONFIDENCE LIMITS = 4.09399   AND   9.57078

LC50 =   11.05
95 PERCENT CONFIDENCE LIMITS = 9.44662 AND 12.9776

LC10 =   7.20248
95 PERCENT CONFIDENCE LIMITS = 5.15369 AND 8.57916
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